# Morphology of Thin Film Polymer Blends

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Polymer thin films are utilized in extremely diverse technologies including opto-electronic devices, tissue engineering, and drug delivery. To optimize properties these films typically contain multiple components, each playing a different role. Because film properties (e.g., conductivity, release rate) depend on how phases are organized, it is critical to understand how blending is influenced by film confinement, particularly as films approach the nanometer (molecular) length scale.

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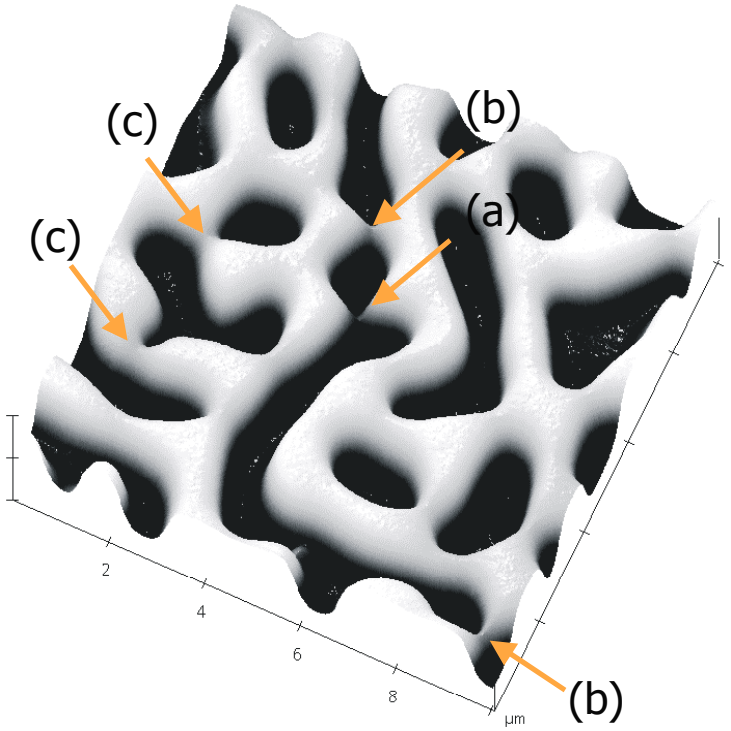


Atomic Force Microscopy image of the tubular A-phase (light) constrained to lie along the substrate. Phase B has been selectively removed (dark). The arrows (a, b and c) denote defects that are suspected to control phase growth. The z scale is 300 nm per tick. Thus the tubes have an elliptical cross-section due to film confinement. The A(30%):B(70%) film was 630nm before etching.